



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

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Ref: EPR-N

Karla S. Petty
Division Administrator, Colorado Division
Federal Highway Administration
12300 West Dakota Avenue, Suite 180
Lakewood, CO 80228

Russell George
Colorado Department of Transportation
4201 E. Arkansas Ave.
Denver, CO 80222

Re: I-70 East Highway Project, Denver CO
Draft Environmental Impact Statement (DEIS)
CEQ# 20080460

Dear Ms. Petty and Mr. George:

The United States Environmental Protection Agency, Region 8 (EPA) has reviewed the Federal Highway Administration (FHWA) and Colorado Department of Transportation's (CDOT's) Draft Environmental Impact Statement (DEIS) for the I-70 East highway project. EPA offers these comments in accordance with the Agency's responsibilities under the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C) and Section 309 of the Clean Air Act, 42 U.S.C. Section 7609.

The project proposes improvements to the I-70 corridor traversing northeast Denver, between I-25 and Tower Road. Four build alternatives are evaluated in addition to the No Action Alternative. They are: Alternative 1: Existing: add general purpose lanes on the existing I-70 alignment (one in each direction, and in some places, two); Alternative 3: Existing, tolled: Add tolled express lanes on the existing I-70 alignment (one lane in each direction, and in some places, two); Alternative 4, Realigned: Realignment with general purpose lanes (add one lane in each direction, and four new lanes in the realigned portion); and Alternative 6: Realignment with tolled express lanes (add one lane in each direction, four general purpose lanes in some places, or three general purpose lanes and two tolled express lanes in certain places). Each of the alternatives also changes several existing interchanges and adds new interchanges. The No Action Alternative assumes that the viaduct between Brighton Boulevard and Colorado Boulevard would be replaced. [Note: Alternatives 2 and 5 were eliminated during the screening process.]

The DEIS provides a significant amount of analysis on a myriad of important concerns. The section on social and economic conditions is one of the most complete analyses on this topic we have reviewed in this EPA Region. The Environmental Justice section similarly contains significant analysis. EPA's comments focus on air quality impacts and environmental justice concerns, with some minor comments on wetlands/waters of the U.S., water quality, energy and greenhouse gas emissions. Enclosed are our detailed comments in these areas.

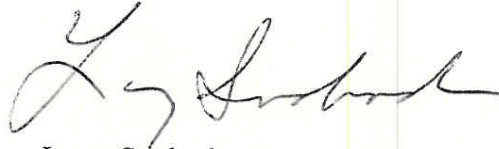
Our major concern with this project is the potential air quality impact on the minority and low-income populations this project affects. The DEIS identifies these populations as disproportionately impacted by this project, but dismisses the air quality issues as a significant impact. Emissions of particulate matter with a diameter of 10 microns or less (PM₁₀) will increase in the project area by approximately 50% by 2030 for each build alternative. In addition, while regional emissions of Mobile Source Air Toxics (MSATs) will decrease overall by 55-65% due to federal vehicle and fuel regulations, EPA remains concerned that shifting the roadway closer to existing residents (as called for in Alternatives 1 and 3), or exposure to residents currently not near the roadway (Alternatives 4 and 6), will increase localized MSAT exposure significantly. This concern is based on the fact that near-roadway concentrations of MSATs can be several times higher than regional concentrations. EPA has concerns with the PM₁₀ and MSAT impacts to these communities, and with many of the DEIS' conclusions regarding the unreliability of modeling to determine MSAT exposure. EPA recommends additional mitigation for the PM₁₀ impacts, dispersion modeling and possible additional mitigation for MSAT impacts, and some language suggestions for the modeling conclusions, in our detailed comments, enclosed.

Rating

Based on EPA's review, and in accordance with our policies and procedures for reviews under NEPA and Section 309 of the Clean Air Act, EPA has rated the alternatives analyzed in this DEIS as EC-2 (Environmental Concerns – Insufficient Information). The Environmental Concerns rating indicates that the EPA review identified environmental impacts that should be avoided in order to fully protect human health or the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts. The "2" rating indicates that the DEIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment. In this case, the air quality impacts of this project on a minority and low-income population identified as disproportionately impacted, is insufficiently analyzed. The identified additional information should be included in the Final EIS. An explanation of the rating criteria is enclosed.

EPA wishes to thank FHWA and CDOT for the many meetings in the early years of this project. We appreciate the opportunity to comment on the DEIS and look forward to working with you to resolve the issues raised in our detailed comments. If you have any questions on our comments, please contact me at 303 312-6004 or Deborah Lebow Aal, at 303 312-6223.

Sincerely,

A handwritten signature in black ink, appearing to read "Larry Svoboda". The signature is fluid and cursive, with a large initial "L" and a long, sweeping underline.

Larry Svoboda
Director, NEPA Program
Office of Ecosystems Protection and Remediation

cc: Chris Horn, FHWA
Randy Jensen, CDOT Region 6 Transportation Director
James Bemelen, CDOT
Brad Beckham, CDOT

**I-70 East Highway Project DEIS
Denver, CO
EPA Detailed Comments**

Air Quality

Summary: Our major concern with this project is the potential air quality impact on the minority and low-income populations this project affects. The DEIS identifies these populations as disproportionately impacted by this project, but dismisses the air quality issues as a significant impact. Emissions of particulate matter with a diameter of 10 microns or less (PM₁₀) will increase in the project area by approximately 50% by 2030 for each build alternative. While regional emissions of Mobile Source Air Toxics (MSATs) will decrease overall by 55-65% due to federal vehicle and fuel regulations, EPA remains concerned that shifting the roadway closer to residents (as called for in Alternatives 1 and 3), or exposure to residents currently not near the roadway (Alternatives 4 and 6) will increase localized MSAT exposure significantly. This concern is based on the fact that near-roadway concentrations of MSATs can be several times higher than regional concentrations.

Vehicle Miles Traveled (VMT) is estimated in the DEIS to be in the range of 6,565,300 miles per day for the No Action Alternative in year 2010 to over 10,000,000 for any of the build alternatives in 2030 (see DEIS p. 5.10-19), which is a very significant amount of traffic, and is relevant to the significance of the PM₁₀ and MSAT impacts. EPA has concerns with PM₁₀ and MSAT impacts to the affected communities, and with many of the DEIS' conclusions regarding the unreliability of modeling to determine MSAT exposure. EPA recommends additional mitigation for the PM₁₀ impacts, dispersion modeling and possible additional mitigation for MSAT impacts, and some language suggestions for the modeling conclusions, below.

Particulate Matter (PM) impacts: The DEIS predicts that PM₁₀ emissions are expected to jump 50 percent by 2030 for all build alternatives (See DEIS pp. 5.10-1, 5.10-22). The DEIS states that since emissions in the study area would not exceed the NAAQS (National Ambient Air Quality Standards), there is no mitigation necessary. However, the document includes some mitigation for air emissions during construction and some during operation. These measures should be augmented to include the construction engine exhaust potential mitigation measures listed in section 8.1 of the DEIS's Air Quality Technical Report (AQTR). These mitigation measures should be listed in the FEIS and included in the Record of Decision (ROD). EPA strongly recommends that CDOT's contracts for construction contain requirements for PM₁₀ mitigation measures.

The additional mitigation measures listed in section 8.1 of the AQTR are:

- Prohibit unnecessary idling of construction equipment;
- Require use of low-sulfur fuel;
- Locate diesel engines and motors as far away as possible from residential areas;

- Locate staging areas as far away as possible from residential uses; and
- Require heavy construction equipment to use the cleanest available engines or be retrofitted with diesel particulate control technology.

We also recommend inclusion of other engine exhaust mitigation measures contained in EPA's December 30, 2003 letter of scoping comments, including:

- Use alternatives to diesel engines and/or diesel fuels such as: biodiesel, LNG or CNG, fuel cells, and electric engines;
- For winter time construction, install engine pre-heater devices to eliminate unnecessary idling;
- Prohibit tampering with equipment to increase horsepower or to defeat emission control devices effectiveness;
- Require construction vehicle engines to be properly tuned and maintained; and
- Use construction vehicles and equipment with the minimum practical engine size for the intended job.

EPA notes that PM_{2.5} trends were not evaluated in the DEIS. EPA recommends that any known information on PM_{2.5} trends be added to the FEIS.

Ozone Nonattainment (DEIS p. 5.10-2): The language in this section should be updated to reflect that the nonattainment designation was a result of a violation of the federal 1997 8-hour 0.080 ppm ozone standard and was effective on November 20, 2007. We note that a detailed plan to reduce ozone has been developed and should be referenced in the FEIS. The resulting attainment plan was approved by the State on December 12, 2008, and is expected to be submitted to EPA not later than July 1, 2009. The plan will require further reductions of ozone levels beyond what was previously required. This change should also be made on p. 5.10-26 of the DEIS.

Additional detailed Air Quality comments are included at the end of this enclosure.

Mobile Source Air Toxics

Air toxics are defined as pollutants in the air that are known or suspected to cause cancer or other serious health effects, such as respiratory, neurological, reproductive, and developmental effects. MSATs are usually the largest source of air toxics of concern in urban areas. Emissions from mobile sources typically occur near the ground and are not particularly buoyant. Therefore, the largest impacts of these emissions tend to occur at receptors close to the source. A large number of studies have examined the association between living near major roads and different adverse health endpoints. Recent modeling and monitoring studies have confirmed that air toxics emissions from mobile sources remain drivers of overall air toxics risks. See, for example, South Coast Air Quality Management District's Multiple Air Toxics Exposure Study III (or the MATES III study, www.aqmd.gov/prdas/matesIII/matesIII.html). For additional information on MSATs, please see EPA's MSAT website, www.epa.gov/otaq/toxics.htm.

The likelihood of significant MSAT impacts and whether MSATs should be analyzed in

an EIS should be based on the magnitude of the project, the proximity of sensitive receptors, and how alternatives change these impacts. Shifting an alignment with high VMT closer to the affected population should merit more analysis than an emissions inventory (see above in *Summary* for VMT estimates). EPA recommends that dispersion modeling of the most significant MSATs (e.g., the six included in the DEIS) should be performed. While we are pleased to see a MSAT emissions inventory comparing alternatives, the results of dispersion modeling for the most significant MSATs would disclose important information on whether the communities affected by this project, which the DEIS identifies as low-income and minority populations disproportionately impacted by this project, are impacted by MSATs. The FEIS could then make note of changes in predicted MSAT ambient concentrations at particular locations, to provide the most appropriate mitigation measures.

Our primary concerns with the MSAT analysis in this DEIS are that the DEIS contains no dispersion modeling for the MSATs of concern, and may not contain mitigation sufficient to address community impacts. The DEIS states that emissions for the six MSATs addressed will be decreasing and no mitigation is needed (DEIS p. 5.10-27). While it is true that overall MSATs will be decreasing due to implementation of regulations controlling emissions from mobile sources, the DEIS also shows that MSAT emissions from all the build alternatives are slightly higher than for the No Build Alternative. More importantly, because near roadway concentrations of MSATs can be several times higher than regional concentrations, shifting the roadway closer to residents can increase MSAT exposure significantly. EPA recommends that dispersion modeling be performed to assess potential impacts and any additional mitigation be outlined in the FEIS and included in the ROD.

EPA's additional concern with the MSAT section is that it contains concepts and language from FHWA's February 2006 Interim Guidance on MSATs, with which EPA has consistently disagreed. We have arranged our comments to follow the DEIS section by section, as follows:

Mobile Source Air Toxics, General (DEIS pp. 5.10-8 through 5.10-9)

The DEIS states that because of the significant reduction in MSATs that will occur because of EPA's 2001 regulations controlling emissions of hazardous air pollutants from mobile sources, "...EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control MSATs." (DEIS p. 5.10-9) This is a misleading statement. This statement was only relevant to national emissions controls at the time of the 2001 rulemaking. The regulatory impact analysis in support of the rule clearly outlined the remaining concerns from near roadway impacts. EPA suggests that this language be removed.

Unavailable Information for Project-Specific MSAT Analysis (DEIS pp. 5.10-9 through 5.10-14)

The DEIS states that "...the lack of a national consensus on an acceptable level of risk and other air quality criteria assumed to protect the public health and welfare, as well as the reliability of available technical tools do not enable us to predict with confidence the project-specific health impacts of the emission changes associated with the alternatives evaluated in this

EIS....Due to these limitations, the following discussion is included in accordance with CEQ regulations (40 CFR section 1502.22(b)) regarding incomplete or unavailable information” (DEIS p. 5.10-9). The DEIS goes on to discuss technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts for the three steps necessary to get to a health risk assessment: emission inventories, dispersion modeling, and human health risk analysis. EPA disagrees with the conclusions reached in this section of the DEIS. There is a growing body of information regarding air toxics and their inherent health risks. While we may agree that a health risk assessment is not necessary in most NEPA analyses, there are adequate scientific bases for the risks and modeling tools for conducting emissions inventories, dispersion modeling, and human health risk analyses, which have been successfully conducted.

The discussion on pages 5.10-12 – 5.10-13 is not relevant to using MOBILE 6.2 as a tool to predict differences in MSAT emissions for alternatives. An inventory of emissions is a very useful tool in a DEIS, and can be based on the MOBILE 6.2 model results.

The DEIS claims that the models used by EPA are not adequate to accurately predict levels of MSATs for highway projects. The DEIS also states that “shortcomings in current techniques for exposure assessment and risk analysis preclude the ability to reach meaningful conclusions about project-specific health impacts.” (DEIS p. 5.10-13) While there are of course areas of uncertainty with any model, EPA believes that there are analytical tools available that yield credible and meaningful information for the decision-making process. EPA has been studying toxics from all kinds of sources, as they are emitted to air, water, and land for over thirty years. EPA has significant experience in interpreting the state of science, including the uncertainties, and making regulatory decisions about toxics. In addition, the Superfund program has a long history of communicating with communities about risk and the impacts of clean-up options on risk and human health. Although we recognize that these issues are new to the transportation community, EPA’s experience in these areas informs our perspective about what is possible and useful.

EPA’s Office of Transportation and Air Quality (OTAQ) has developed *Modeling Ambient Air Toxics from Transportation Projects*, which is a technical description of air toxics analysis tools and methods for highway projects. We recommend using this document in the future for these analyses.

In summary, the discussion in the DEIS is directed solely to why conducting health assessments of MSAT impacts from transportation projects does not make sense, and it ignores and undermines the fact that emissions inventory information and dispersion modeling can be done, is credibly done often using EPA-approved models, and can provide worthwhile information. The focus in this document on information that is unavailable or incomplete inappropriately takes the place of information that should be included to disclose the potentially significant adverse impacts from MSATs from this project.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating MSATs (DEIS pp. 5.10-14 through 5.10-16)

The DEIS quotes toxicity information for the six priority MSATs taken from EPA's Integrated Risk Information System (IRIS) database. The purpose of quoting the weight of evidence sections from IRIS for the priority MSATs is unclear. The section is incomplete because it does not include the numerical estimates of toxicity for the cancer or non-cancer endpoints (Inhalation Unit Risk and Reference Concentration) for these chemicals and does not include information on other MSATs. Information on Inhalation Unit Risks and Reference Concentrations can be found in the tables at <http://epa.gov/ttn/atw/toxsource/summary.html>. EPA recommends deleting this information or providing clarification.

The DEIS references the technical report conducted on North Denver by Gregg Thomas and Debra Bain (2007), which included a portion of the project area. The Thomas et al. report, entitled "Going One Step Beyond: A Neighborhood Scale Air Toxics Assessment in North Denver (The Good Neighbor Project)," evaluated the influence of major roadways on ambient air toxics concentrations in Metropolitan Denver. The assessment included modeling GIS-based data from CDOT, Denver Regional Council of Governments (DRCOG), and Colorado Department of Public Health and Environment (CDPHE) to predict concentrations of approximately 70 air toxics. The intent of The Good Neighbor Project was to explicitly assign onroad MSAT emissions to actual sections of roads. The results of this report indicate that small-scale, highly detailed air toxics assessments are cost-effective and can generate realistic data that match conceptual models. This report, and the rest of this paragraph (DEIS p. 5.10-16) contradict much of what has been stated in the DEIS on MSATs. A project-specific micro-scale monitoring study can be performed to accurately assess impacts of MSATs from nearby roadways, and in fact such studies have been completed for several EISs. The results from the Good Neighbor Project should be accurately reported in the FEIS. The City and County of Denver should be contacted for more information from the study.

Project Level MSAT Discussion (DEIS p. 5.10-17)

As stated earlier, EPA believes that, contrary to the statement made on page 5.10-17, reliable methods do exist to assess the health impacts of MSAT emissions under the project. In fact, several transportation projects have included health risk assessments in the DEIS (see, e.g., Port of Los Angeles China Basin Shipping, Port of Long Beach Middle Harbor, Schuyler Heim Bridge Replacement and SR-47 Expressway). All three of these documents included a human health risk assessment done for *on-road mobile sources*. This should not imply that EPA believes a risk assessment should be done for this project, rather, that they can be done and are being done. For this project, EPA believes that already-existing information from the Good Neighbor Project described above, as well as dispersion modeling, should be included in the FEIS.

When the highway is widened and moved closer to residences and other critical receptors, the localized concentrations of MSATs will likely be higher for the build alternatives than existing conditions or the no action alternative. While over time regional concentrations of MSATs will decrease due to federal vehicle and fuel regulations, this does not preclude the possibility of localized increases related to this project. The magnitude of this increase should

have been more fully analyzed in the DEIS. While there are acknowledged uncertainties in both the local scale emissions model (MOBILE 6.2) and the available roadway dispersion models (CAL3QHC and HYROAD), these tools can provide excellent relevant information on potential impacts. The models' ability to predict relative changes in MSAT concentrations between the build and No Build Alternatives would be less affected by these uncertainties and could provide information to the public on the impact of the project.

Environmental Consequences

PM₁₀ Hot Spot Analysis: The DEIS predicts increases in PM₁₀ emissions (see DEIS page 5.10-24). As stated above, mitigation should be more specific and geared towards significantly reducing PM₁₀ emissions (see above suggestions), which will consequently reduce MSAT emissions as well.

Mobile Source Air Toxics (DEIS pp 5.10-24 – 5.10-26): EPA commends FHWA and CDOT for including the emissions inventory information on MSATs for each alternative in the DEIS. As explained, the DEIS shows a significant decrease in MSATs from 1990 through 2030 for all six MSATs addressed, due to EPA's national emission control programs for vehicles. It also shows that there is a slight increase of emissions from the No Action Alternative as compared to any of the build alternatives, and will potentially be closer to sensitive receptors. EPA believes that more specific mitigation for this impact, particularly for sensitive receptors near the highway, may be appropriate, once dispersion modeling is preformed.

Mitigation

As stated above in several sections, EPA is suggesting additional mitigation for both PM₁₀ impacts and potentially for MSAT impacts. For MSATs, many of the suggested mitigation measures that will reduce PM₁₀ will also reduce MSAT exposure. These are mostly geared to construction air quality impacts. There may also be opportunities to be more creative with mitigation measures. The affected communities should be consulted, and EPA is available to assist communities in the identification of mitigation measures to reduce impacts. As an example, the measures suggested in the Healthy Air for North Denver (HAND) final report (December 23, 2008) could be used to offset impacts in the community from the highway.

Monitoring for PM₁₀, included as a mitigation measure on p. 5.10-27 of the DEIS, could provide a valuable response mechanism regarding direct PM₁₀ emissions on the local, affected community. Monitoring may also be an appropriate mitigation measure for MSATs. EPA suggests that the FEIS provide an outline of a monitoring plan such that EPA, other Agencies, and the affected community could understand how the monitoring will be performed, identify action levels for the monitored data, and how the data will be shared with the appropriate Agencies and the community.

Environmental Justice

Executive Order 12898 directs Federal Agencies to identify and address, as appropriate,

“disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations” (E.O. 12898, 59 Fed. Reg. at 7630, section 1-101). The DEIS indicates that impacts of this project on minority and low-income populations will be disproportionately high and adverse compared to the general population or a comparison group. The disproportionate impacts identified in the DEIS are mostly the displacement of homes and businesses, and noise impacts. In addition to these impacts, EPA believes that the potential air quality impacts of moving the highway closer to affected receptors may be a disproportionate impact. The Air Quality section above describes both the PM₁₀ and MSAT impacts as needing further consideration. Mitigation measures to reduce these impacts should be addressed in the FEIS and ROD.

CDOT and FHWA did an excellent job in communicating with the impacted communities along the existing I-70 corridor during the early years of this study. In fact, the DEIS states that Alternatives 4 and 6, the realignment alternatives, grew out of the concerns the communities expressed in meetings with CDOT and FHWA. EPA commends the lead agencies for listening to these concerns, and adding build alternatives to address the concerns. It appears that the communities most involved in the project prefer the selection of one of the realignment alternatives. If Alternatives 1 or 3 (not realignment alternatives) are selected, it is not clear that the newly affected communities have had an opportunity to provide input on the impacts and mitigation. The FEIS and ROD should analyze and compare the relative disproportionate impacts to the different affected communities of one alternative versus another.

The primary disproportionate impacts identified in the DEIS are the displacement of homes and businesses, and noise impacts. EPA recommends adding to these impacts the air quality impacts of moving a highway closer to affected receptors. The Air Quality section above describes both the PM₁₀ and MSAT impacts EPA believes need to be further considered as potentially disproportionate impacts.

The Council for Environmental Quality (CEQ) guidance entitled, *Environmental Justice Guidance Under the National Environmental Policy Act* ([www.whitehouse.gov/CEQ/December 10, 1997](http://www.whitehouse.gov/CEQ/December10,1997)) states that “When an Agency has identified a disproportionately high and adverse human health or environmental effect on low-income populations, minority populations, or Indian Tribes from either the proposed action or alternatives, the distribution as well as the magnitude of the disproportionate impacts in these communities should be a factor in determining the environmentally-preferable alternative.” (CEQ Guidance p. 15) Consistent with this guidance, EPA recommends, that CDOT and FHWA look more closely at the potential adverse air quality impacts on the low-income and minority populations that may be disproportionately impacted by the project. We expect that when CDOT and FHWA identify their environmentally-preferable alternative these air quality impacts will be taken into account. In addition, EPA believes that the mitigation to reduce or avoid disproportionate impacts should be discussed in the FEIS and included in the ROD.

The DEIS states that “During the public review and comment period for the DEIS, minority and low-income communities (as well as other members of the public) will have the opportunity to review these mitigations and propose other mitigations to reduce impacts. During

the development of the FEIS, additional outreach will be conducted to further develop mitigation measures for environmental justice and the community, including meetings with the Environmental Justice Compliance Committee and working groups.” (DEIS p. 5.3-35). EPA is available to participate in assisting the community with the identification of mitigation measures to reduce impacts on the affected communities. For further coordination on EPA involvement with the communities on these issues, please contact Tami Thomas-Burton at 303 312- 6581.

Wetlands

The EIS should include an analysis of the potential effects to wetlands along drainages, such as Sand Creek, due to the increased duration of flood flows due to the project. Although the Best Management Practices included in the DEIS include detention ponds to limit runoff to the current flood flow amounts, these ponds also increase the duration of the flood flows, which can potentially lead to increased erosion. The wetland and riparian areas along the drainages should be monitored to ensure that any indirect impacts due to the increased runoff from this project is mitigated as soon as possible.

Water Quality

The DEIS shows an overall increase in pollutant runoff ranging from 11% to 74%. It is not readily discernible how the Driscoll model used in the DEIS identifies the necessary locations for water quality ponds, nor is it easy to discern whether water quality standards will be exceeded. To remedy this, the FEIS should explain:

- How water quality ponds are located, designed and maintained to treat the Water Quality Capture Volume as defined by Urban Drainage and Flood Control District; and
- How the Driscoll model was used to compare increased loading of copper, lead, and zinc relative to water quality standards to ensure that no discharges would cause or contribute to a violation of water quality standards.

Energy Consumption

Section 5.11 of the DEIS includes estimates of energy consumption for this project, arranged by alternative. It does not contain any specific commitments to reducing energy consumption, or promoting energy efficiency although it does include a reference to CDOT’s Environmental Stewardship Guide, and includes language to work with designers, contractors, and suppliers to implement, where appropriate, energy conservation measures. This section should identify specific requirements to address energy efficiency for the construction of this project.

Greenhouse Gas Emissions

EPA is pleased to see the discussion of CDOT’s commitments to reduce greenhouse gas emissions as a result of the Governors Climate Action Plan. Exhibit 5.21-17 (DEIS p. 5.21- 28)

indicates that CO₂ emissions from highways will increase from 2005 to 2035. It is unclear whether this estimate takes into account CDOT's emission reduction measures, and if it does, EPA is concerned that CO₂ emissions are still increasing. We would assume that the Governor's plan expects that mitigation measures implemented for this project would result in a decrease of CO₂ emissions to reach Colorado's Climate Action Plan's goal of reducing greenhouse gas emissions to 20% below 2005 levels by 2020 (and 80% below by 2050). EPA recommends that the FEIS contain additional mitigation measures to address the CO₂ increases identified in the DEIS.

Additional Technical Air Comments

- DEIS p. 5.10-1, EPA recommends that the sentence which states: "... emissions in 2030 are projected to be modestly higher (less than ten percent) for all build alternatives ..." be modified. In view of the emissions data presented in Exhibit 5.10-9 on page 5.10-21, it would benefit the public to know that emissions are projected to be higher in all the analysis years (2010, 2020, and 2030) for all pollutants evaluated when compared to the no-action alternative.
- DEIS p. 5.10-2, second full paragraph, fourth sentence should be modified to state "For this to happen the state must develop a maintenance plan that demonstrates maintenance of the standard for an initial period of at least ten years after redesignation to attainment by EPA (ref. CAA section 175A(a)). EPA must then approve the redesignation request to attainment and the maintenance plan. Once this happens, the area's designation is then changed to attainment/maintenance. Eight years after the area is redesignated to attainment/maintenance, the area must submit for EPA's approval a revised maintenance plan that demonstrates maintenance for a subsequent ten-year maintenance period (ref. CAA section 175A(b))." If the above clarification is made, the last sentence in this paragraph should be deleted.
- DEIS p. 5.10-2: References are made to the "... 8-hour ozone standard ...", which should be clarified to only be describing the 1997 8-hour (0.08 ppm) standard (and not the 2008 revised 8-hour ozone standard of 0.075 ppm.)
- DEIS p. 5.10-3, The sentence which discusses "... strong temperature inversions during the colder months" should be expanded to also discuss the stagnant air inversions that occur in the summer months which have lead to violations of the 1997 8-hour ozone NAAQS and the metro-Denver/NFR area's current nonattainment designation.
- DEIS p. 5.10-4, Exhibit 5.10-1: EPA revised the lead (Pb) standard to 0.15µg/m³ which is measured over a rolling 3-month average. (ref. 73 FR 66964, November 12, 2008, effective January 12, 2009.) The exhibit should be changes to show that the lead primary and secondary standards are the same.
- DEIS p. 5.10-6, second paragraph: It would be more valuable to have the discussion of monitoring data for the current National Ambient Air Quality Standards (NAAQS) that

are relevant to the metro-Denver area and the project (i.e., 24-hour PM_{2.5} standard of 35 µg/m³ and the 8-hour ozone standards of 0.075 ppm and 0.080 ppm.)

- DEIS p. 5.10-6, Exhibit 5.10-3: Several comments – the averaging times shown for the 8-hour ozone standard and the 1-hour ozone standard should be reversed (8-hour ozone standard is the 4th max. value and the 1-hour ozone standard is the 1st max. value); under the heading of “Existing NAAQS Standard” the 8-hour ozone NAAQS is now 0.075 ppm (ref. 73 FR 16436, March 27, 2008); the 24-hour PM_{2.5} value for 2001 (68.0) is highlighted; however, exceedances for the 24-hour 35 µg/m³ NAAQS are shown for 2000, 2002, 2004, 2005, and 2006, and finally, State-certified ambient air quality data are available for 2007 and should be presented in the table.
- DEIS p. 5.10-7, Exhibit 5.10-3: Several comments – the averaging times shown for the 8-hour ozone standard and the 1-hour ozone standard should be reversed (8-hour ozone standard is the 4th max. value and the 1-hour ozone standard is the 1st max. value); under the heading of “Existing NAAQS Standard” the 8-hour ozone NAAQS is now 0.075 ppm (ref. 73 FR 16436, March 27, 2008); the exceedance of the 8-hour ozone NAAQS in 2006 should also be highlighted; the 24-hour PM_{2.5} value for 2001 and 2006 show exceedances for the 24-hour 35 µg/m³ NAAQS, and finally, State-certified ambient air quality data are available for 2007 and should be presented in the table.
- DEIS p. 5.10-8: At this point in time, the Denver Regional Council of Governments (DRCOG) is required to demonstrate conformity for the motor vehicle emission budgets (MVEBs) in the attainment/maintenance plans for CO, PM₁₀, NOx associated with PM₁₀, the VOC component of the 1-hour ozone maintenance plan, and the NOx component of the 1-hour maintenance plan (ref. Table 4 on page 29 of the “2008 Amendment Cycle 2 DRCOG Conformity Determination” as adopted by DRCOG on January 21, 2009.)
- DEIS p. 5.10-8, paragraph entitled “Criteria Pollutants”, the sentence which states that “The mobile source emission factors for PM₁₀ and SO₂ were taken from Table 3.4-1 Summary of VMT ...” should include a brief explanation or footnote as to why the factors from EPA’s MOBILE6.2 model and AP-42 section 13.2 were not used.
- DEIS p. 5.10-20: The sentence which states that “Exhibit 5.10-9 and Exhibit 5.10-10 show the annual criteria pollutant emissions associated with the different alternatives” should be clarified. When reviewing Exhibit 5.10-10 on page 5.10-22 it is unclear what data are represented as only one graph appears and does not have a title as to the no-action or a particulate alternative. Also, the CO line in Exhibit 5.10-10 appears to be in error as for the no-action, or any of the alternatives, do the CO emissions exceed 35,000 tons per year (ref. data in Exhibit 5.10-9.)?
- DEIS p. 5.10-21, Exhibit 5.10-9: The note at the bottom of the table states that “PM₁₀ emissions include PM, NOx, and SO₂ from exhaust and road dust and sanding emissions.” This appears inconsistent with the table above where NOx, SO₂, and PM₁₀ are specifically broken out.

- DEIS p. 5.10-21, Exhibit 5.10-9: On page 5.10-15 potential hazards and toxicology of particular MSATs are presented as extracted from EPA's Integrated Risk Information System. Diesel exhaust appears as "... likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of DPM and diesel exhaust gases." Based on this and other statements in the Air Quality section, a discussion should be provided regarding PM_{2.5} and PM_{2.5} emissions should be provided, in addition to the emission figures included in Exhibit 5.10-9, for all the analysis years (2001, 2010, 2020, and 2030.) As applicable for the other criteria pollutants, we note that EPA's MOBILE6.2 can calculate PM_{2.5} emissions (see page 55 of the "User's Guide to MOBILE6.1 and MOBILE6.2"; EPA420-R-03-010, August, 2003.)
- DEIS p. 5.10-22: the sentence which indicates that the project should have minimal effect on O₃ levels should be changed to "... indicates that the project should have minimal *additional* effects on O₃ levels."
- DEIS p. 5.10-23: It is indicated that a CO Hot-spot analysis is not required for the No Action Alternative. EPA recommends adding a sentence explaining why the No Action Alternative is not being evaluated.
- DEIS p. 5.10-26, Exhibit 5.10-14: This Exhibit is labeled "Annual Mobile Source Air Toxics Emissions." This does not appear to be correct as these are criteria pollutant emissions data.
- DEIS p. 5.21-25: The statement that "No violations of National Ambient Air Quality Standards for pollutants have been recorded in the Denver metropolitan area since 1995" is incorrect for all six criteria pollutants and contradicts the sentence that follows, which discusses the nonattainment designation for metropolitan Denver with respect to the 8-hour 0.080 ppm NAAQS. This statement should be revised.

Air Quality Technical Report

- Pg. 3, paragraph entitled "Eight-Hour Ozone and Particulate Matter PM_{2.5} NAAQS", second sentence which states: "... and tightening the existing eight hour O₃ standard." For clarity, EPA recommends this section elaborate on the prior 1997 8-hour ozone NAAQS of 0.080 ppm and the new 8-hour ozone NAAQS of 0.075 ppm (ref. 73 FR 16436, March 27, 2008, effective May 27, 2008.)
- Pg. 4, first paragraph under "Existing Conditions": This paragraph should be revised to reflect the following redesignation to attainment Federal process beginning with the fifth sentence: "For this to happen the state must develop a maintenance plan that demonstrates maintenance of the standard for an initial period of at least ten years after redesignation to attainment by EPA (ref. CAA section 175A(a)). EPA must then approve the redesignation request to attainment and the maintenance plan. Once this happens, the

area's designation is then changed to attainment/maintenance. Also, eight years after the area is redesignated to attainment/maintenance, the area must submit for EPA's approval a revised maintenance plan that demonstrates maintenance for a subsequent ten-year maintenance period (ref. CAA section 175A(b))." Based on the above clarification, the last sentence in this paragraph should be deleted.

- Pg. 4, second paragraph under "Existing Conditions", third sentence should be revised to read as: "Because of violations of the 1997 8-hour ozone standard, based on air quality data from 2001, 2002, and 2003, EPA designated the metro-Denver area as nonattainment in April, 2004, but deferred the effective date as the State and regional air quality agencies in metro-Denver had worked to develop a plan to address the 8-hour ozone NAAQS nonattainment issue."
- Pg. 4, second paragraph under "Existing Conditions", second last sentence: This should be revised to reflect that a detailed plan to reduce ozone has been developed by the Colorado Air Pollution Control Division, along with the Regional Air Quality Council, Denver Regional Council of Governments, and the North Front Range Metropolitan Planning Organization. The resulting attainment plan was submitted by the Regional Air Quality Council to the Colorado Air Quality Control Commission and was approved on December 12, 2008, with legislative review expected in early 2009, and as per Court settlement, submitted to EPA by not later than July 1, 2009. The plan will require further reductions on ozone levels beyond what was previously required.
- Pg. 4, second paragraph under "Existing Conditions", last sentence: For the 1997 8-hour ozone NAAQS, the metro-Denver area is nonattainment as of November 20, 2007. The metro-Denver area is attainment/maintenance for the prior 1-hour ozone NAAQS as of October 11, 2001. (This is relevant as currently, DRCOG must still demonstrate conformity to the VOC and NOx MVEBs in the maintenance plan.)
- Pg. 4, last paragraph on the page: This should be expanded to also discuss the stagnant air inversions that occur in the summer months which have lead to violations of the 1997 8-hour ozone NAAQS and the metro-Denver/NFR area's current nonattainment designation.
- Pg. 6, Table 1: EPA revised the lead (Pb) standard to $0.15\mu\text{g}/\text{m}^3$, which is measured over a rolling 3-month average. (ref. 73 FR 66964, November 12, 2008, effective January 12, 2009.) The lead primary and secondary standards are the same. EPA also revised the 8-hour ozone standard to 0.075 ppm (ref. 73 FR 16436, March 27, 2008.) We note though that the prior 8-hour 0.08 ppm NAAQS is still applicable to metro-Denver as the area is designated as nonattainment for that standard.
- Pg. 8, last paragraph, last sentence: To clarify, at this point in time, the Denver Regional Council of Governments (DRCOG) is required to demonstrate conformity for the motor vehicle emission budgets (MVEBs) in the attainment/maintenance plans for CO, PM₁₀, NOx associated with PM₁₀, the VOC component of the 1-hour ozone maintenance plan,

and the NO_x component of the 1-hour maintenance plan (ref. Table 4 on page 29 of the “2008 Amendment Cycle 2 DRCOG Conformity Determination” as adopted by DRCOG on January 21, 2009.)

- Pg. 9, Table 3: The averaging times shown for the 8-hour ozone standard and the 1-hour ozone standard should be reversed (8-hour ozone standard is the 4th max. value and the 1-hour ozone standard is the 1st max. value); under the heading of “Existing NAAQS Standard” the 8-hour ozone NAAQS is now 0.075 ppm (ref. 73 FR 16436, March 27, 2008); the 24-hour PM_{2.5} value for 2001 (68.0) is highlighted; however, exceedances for the 24-hour 35 µg/m³ NAAQS are shown for 2000, 2002, 2004, 2005, and 2006, and finally, State-certified ambient air quality data are available for 2007 and should be presented in the table.
- Pg. 10, Table 3: The averaging times shown for the 8-hour ozone standard and the 1-hour ozone standard should be reversed (8-hour ozone standard is the 4th max. value and the 1-hour ozone standard is the 1st max. value); under the heading of “Existing NAAQS Standard” the 8-hour ozone NAAQS is now 0.075 ppm (ref. 73 FR 16436, March 27, 2008); the exceedance of the 8-hour ozone NAAQS in 2006 should also be highlighted; the 24-hour PM_{2.5} value for 2001 and 2006 show exceedances for the 24-hour 35 µg/m³ NAAQS, and finally, State-certified ambient air quality data are available for 2007 and should be presented in the table.
- Pg. 10, Section 5.2.2 “Mobile Sources Air Toxics”: Please refer to our comments regarding MSATs, above.
- Pg. 24, section 7.1.1 “Criteria Pollutants”, third paragraph: “The mobile source emission factors for PM₁₀ and SO₂ were taken from Table 3.4-1 Summary of VMT ...”; this statement should include a brief explanation or footnote as to why the factors from EPA’s MOBILE6.2 model and AP-42 section 13.2 were not used.
- Pg. 29, Figure 9: The CO line in Figure 9 appears to be in error as for the no-action alternative, none of the analysis years (2001 to 2030) exceed 35,000 tons per year of CO.
- Pg. 45, fourth bullet, paragraph which states: “PM_{2.5} levels, which have been in compliance with the standards to date, should be watch closely ... the CAMP monitoring Station would have exceeded the standard in 2000, 2001, 2002, 2004 and 2005.” We note on page 18 potential hazards and toxicology of particular MSATs are presented as extracted from EPA’s Integrated Risk Information System. Diesel exhaust appears as “... likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of DPM and diesel exhaust gases.” Based on this and other statements in the Air Quality Technical Report, it would be appropriate that a discussion should be provided regarding PM_{2.5} and that PM_{2.5} emissions should be provided, in addition to the emission figures for all the analysis years (2001, 2010, 2020, and 2030.) As applicable for the other criteria pollutants, we note that EPA’s MOBILE6.2 can calculate PM_{2.5} emissions (see page 55 of the “User’s Guide to

MOBILE6.1 and MOBILE6.2”; EPA420-R-03-010, August, 2003.)

- Pg. 48, fifth bullet at top of page which states: “Monitoring for PM₁₀, which will allow for the real-time modification or implementation of various dust control measures.” This type of potential mitigation measure will provide a valuable response mechanism regarding direct PM₁₀ emissions on the local, affected community. Therefore, it would be appropriate to provide an outline of the monitoring plan such that EPA, other Agencies, and the affected community understand for example; how the monitoring will be performed, identify action levels for the monitored data, and how the data will be shared with the appropriate Agencies and the community.
- Pg. 48, under the heading “Other potential mitigation strategies designed to reduce engine exhaust emissions during construction,” we suggest inserting other potential engine exhaust mitigation measures contained in our December 30, 2003 letter of scoping comments including:
 - Use alternatives to diesel engines and/or diesel fuels such as: biodiesel, LNG or CNG, fuel cells, and electric engines.
 - For winter time construction; install engine pre-heater devices to eliminate unnecessary idling.
 - Prohibit tampering with equipment to increase horsepower or to defeat emission control devices effectiveness.
 - Require construction vehicle engines to properly tuned and maintained.
 - Use construction vehicles and equipment with the minimum practical engine size for the intended job.



U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.